BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Milwaukee Water Works, Milwaukee County, Wisconsin, for Authority to Increase Water Rates	**3720-WR-107**

SURREBUTTAL TESTIMONY OF ANDREW BEHM

August 5, 2010

Q. State your name.

A. My name is Andrew Behm.

Q. Have you previously submitted direct, rebuttal, and supplemental direct testimony in this proceeding?

A. Yes.

Q. What is the purpose of your surrebuttal testimony?

A. My purpose in surrebuttal testimony is to respond to objections to my revised cost of service study, Exhibit 12.7, raised in supplemental rebuttal testimony by Mr. Wojcehowicz, Mr. Planton, and Mr. Gorman.

Q: Mr. Wojcehowicz presented two concerns with your cost of service study. His first concern is that wholesale customers are bearing some of the cost of MWW's water meter replacement program. Is this accurate?

A: Mr. Wojcehowicz is correct, in part. Costs associated with meters comprise the equivalent meters cost function. This cost function is allocated to customer classes, including wholesale customers, based on their number of meter equivalents. For instance, Wauwatosa has 720 meter equivalents, which is 0.32 percent of the total number of meter

equivalents for MWW. Therefore, Wauwautosa is allocated 0.32 percent of the cost of metering including the upcoming meter replacement program. All ten wholesale customers combined pay 1.68 percent of these costs.

It is my understanding that the cost of labor for installation will be capitalized along with the cost of the meters. The capitalized installation cost is allocated, as before, on the basis of meter equivalents, and wholesale customers will likewise pay 1.68 percent of the installation cost.

Q: Mr. Wojcehowicz also expresses his concern that wholesale customers are bearing some of the cost of MWW's cross connection control program. Is this accurate?

A: Yes, wholesale customers pay a portion of the cost of MWW's cross connection control program. This spreading of cost responsibility is conceptually appropriate because all water customers benefit from cross connection control. Mr. Wojcehowicz's argument seems to rest on the premise that contamination of MWW's distribution system by a cross connection would not adversely affect wholesale customers. I disagree. There is no physical barrier between mains serving retail customers and those serving wholesale customers, so it is possible that a significant loss of pressure could cause widespread contamination affecting wholesale and retail customers alike.

Actually, I largely excluded wholesale customers from paying the cost of cross connection control even though they receive a benefit. My understanding is the cost of the cross connection control program is included in Account 663, Meter Expenses. Leaving aside the question of whether this is an appropriate account for these expenses, I allocated Account 663 to the equivalent meters cost function as discussed above. The

result is that wholesale customers only make a token contribution to cross connection control costs, in spite of the benefit they receive.

Q: On pages SR2.69-70, Mr. Planton states that you erred by basing total transmission and distribution main balances in Exhibit 12.2 on an estimate rather than the actual plant balances. He states that the 2007 cost of service study used actual financial records to make this allocation. Is this accurate?

A: Mr. Planton states (in lines 16-18 on page SR2.69) "The 2007 COSS allocated Plant Account 343, Mains, between transmission mains and distribution mains based upon MWW's actual financial records. This resulted in allocating 40% of Account 343 to transmission mains, and 60% to distribution mains." I agree with Mr. Planton that the 2007 cost of service study allocated 40 percent of the total balance for mains to transmission and 60 percent to distribution, but he is wrong when he claims this allocation was based on actual financial records. In my original cost of service study (Exhibit 12.2 Schedule 5a page 2), transmission mains are $120,927,295 and distribution mains are $181,449,238. Total mains are $302,376,533, comprised of 40 percent transmission mains and 60 percent distribution mains. The fact that the results are identical shows I did not change the method of allocating Account 343 in the original cost of service study.

While I agree with Mr. Planton that allocations based on actual plant balances are an improvement, his criticism of the original allocation in Exhibit 12.2 is inaccurate.

Q: On page SR2.68, Mr. Planton proposes allocating 29.3 percent of contributions for mains to transmission mains. Is this proposed allocation reasonable?

A: No. Mr. Planton bases his proposal on financing of main additions from 2003 through 2009, which is not representative of MWW's practice of funding mains throughout its history.

Three pieces of information are known and accepted by all parties. First, MWW's total value of mains broken down into utility financed and contributed is shown in Exhibit 2.3. Second, utility financing and contributions for mains from 2003 through 2009 are categorized as transmission and distribution in Exhibit 2.5. Mr. Planton uses factors derived from Exhibit 2.5 to allocate the contributed total from Exhibit 2.3.

The third piece of information, which Mr. Planton fails to consider, is MWW's total value of mains broken down into transmission and distribution. If Mr. Planton's assumption is correct that his allocation for years 2003 through 2009 represents practices throughout MWW's history, applying the allocation factors derived from Exhibit 2.5 to the utility financed and contributed totals from Exhibit 2.3 should yield the transmission and distribution totals shown in Exhibit 2.3. As shown in Exhibit 12.10 and summarized in Exhibit 12.11, Mr. Planton's method yields total balances for transmission and distribution mains that are significantly different from the accepted values in Exhibit 2.3. Therefore, Mr. Planton's assumption that utility practice from 2003 through 2009 can be extrapolated to all mains is erroneous.

Q: On pages SR2.78-79, Mr. Planton argues that system demand ratios should be based on system design parameters. Do you agree?

A: I agree that design parameters are a reasonable way to calculate system demand ratios. I do not agree, however, that design parameters are a more reasonable basis than operating history or that my decision to use operating history is unreasonable. To defend his

position, Mr. Planton quotes (on lines 20-24 of page SR2.78) the American Water Works Association, Manual M1, *Principles of Water Rates, Fees, and Charges* where it says allocation factors, i.e. system demand ratios, "should be determined on the basis of the actual operating history or design criteria for each system." The M1 Manual suggests that, other things being equal, design parameters and operating history are equally valid bases for calculating allocation factors. Mr. Planton succeeds in showing that his own method is reasonable, but he fails to show that my method is unreasonable.

Q: On pages SR2.82-85, Mr. Planton analyzes trends in MWW's max day to average day ratio. He concludes that max day is trending upward relative to average day. Please summarize Mr. Planton's position.

A: Mr. Planton analyzes max day to average day ratios over 45, 35, 25, 16, and 7 years. Graphs showing these trends are Exhibits 2.52 through 2.56. Based on a review of temperature and rainfall records, he excludes 1988, 1995, and 2007 through 2009 from his analysis. Over the 45, 35, 25, and 16 year periods he finds a downward trend in the max day to average day ratio, resulting in current estimates of max day to max hour around 1.5. For the seven years from 2000 to 2006, he finds an upward trend resulting in an estimate of 1.58. He throws out the lower estimates and proposes a value of 1.58 for the system demand ratio.

Q: Why does Mr. Planton exclude max day to average day values for 1988, 1995, and 2007 through 2009? Do you agree with his justification?

A: As noted on page D12.9 of my direct testimony, 1988 and 1995 were severe drought years during which MWW experienced historically high system demand ratios. However,

as Mr. Planton bases his proposed max day to average day ratio only on his trend line from 2000 through 2006, 1988 and 1995 are irrelevant to his analysis.

Mr. Planton's rationale for excluding the most recent measurements, 2007 through 2009, is flawed and gives the impression of an upward trend in the max day to average day ratio where none exists. Mr. Planton excludes the summers of 2007 and 2008 and says they are "anomalies" due to above average rainfall. He is correct that the summers of 2007 and 2008 were wet, although temperatures were normal. He is also correct that the summer of 2009 was cool (average temperature 2 degrees below normal), although rainfall was average. However, Mr. Planton puts too much weight on rainfall and temperature and too little on the consistent trend of decreasing max day to average day ratios evident from his own analysis (Exhibits 2.35 through 2.39). Instead of seeing 2007 through 2009 as, at least in part, the continuation of a clear trend, he focuses on an insufficient explanation based on weather fluctuations.

Q: Is Mr. Planton consistent in his treatment of outlier years?

A: No.

Q: Please explain the inconsistencies in his definition and treatment of outlier years.

A: Mr. Planton's decision to exclude 2007 through 2009 as outliers is questionable, in light of the fact that he includes the years 2000, 2004, and 2005. Mr. Planton makes no comment on the summer of 2000, which was (from April to August) wetter and cooler than the summers of 2007 and 2008 (rainfall 7 inches above normal compared to 5 and 4.5 inches above normal in 2007 and 2008). The system demand ratio experienced in 2000 was lower than 2007 and 2008, as expected for a cooler, wetter summer. Not only does Mr. Planton include the summer of 2000, which qualifies as an outlier more

thoroughly than the years he excludes, he uses it as the first year of his analysis and by doing so skews the results upward. By starting with an unusually low value, his analysis gives the impression of an upward trend when in fact subsequent values are only returning to the normal trend line. I propose a better starting point for the analysis is 1996, which also has a low system demand ratio but which puts the value for 2000 in context.

The summers of 2004 (rainfall 5.5 inches above normal and temperature 3 degrees below normal) and 2005 (rainfall 6.5 inches below normal and temperature 4 degrees above normal) are both more extreme than the summers of 2007 through 2009. His reason for including 2004 and 2005 appears to be that the system demand ratios of 1.42 and 1.52 are near the middle of the range for the decade. However, these middle-of-the-road values must be explained by something other than rainfall or temperature. They also cannot be explained by economic conditions as the economy was relatively stable in 2004 and 2005. While I agree with Mr. Planton's decision to include 2004 and 2005 (although I would include several other years he leaves out), they demonstrate that his criteria for excluding outliers are inconsistently applied. His criteria force the outcome that MWW's system demand ratio is rising. 2007 through 2009, which Mr. Planton excludes, do not fit a rising trend; 2000, 2004, and 2005, which Mr. Planton includes even though rainfall and temperature for those years are significantly outside the norm, do fit a rising trend.

Exhibit 12.12 shows that a limited analysis of the max day to average day ratio gives the appearance of an increasing trend while a broader, more comprehensive analysis brings a decreasing trend to light.

Q: What is the source of your rainfall and temperature records?

A: For my analysis, I used rainfall and temperature records from the National Agriculture Statistics Service of the United States Department of Agriculture. These numbers include Kenosha, Racine, Walworth, Waukesha, Milwaukee, Ozaukee, and Washington counties. The rainfall and temperature reports are available at http://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Crop_Progress_&_Condition/ and are included in Exhibit 12.13.

It is important to note that Mr. Planton analyzes rainfall from June to August. I use rainfall from April to August. Exhibit 12.14 shows that considering rainfall during a larger portion of the growing season, April to August instead of June to August, gives measurements more closely correlated with observed MWW system demand ratios from 2000 through 2009. A correlation coefficient of negative one indicates a perfect negative correlation. The correlation coefficient of -0.626 for April to August rainfall compared to -0.572 for June to August rainfall indicates April to August rainfall is more closely correlated to observed values of the max day to average day ratio.

Q: Mr. Planton argues that you arbitrarily reduced your estimate of maximum demand for water for public fire protection for Milwaukee. He testifies that this constitutes discrimination against wholesale and suburban retail customers. Why did you reduce your estimate of Milwaukee's maximum demand for public fire protection?

A: In my revised cost of service study in Exhibit 12.7, I reduced my estimate of Milwaukee's maximum total demand for fire protection from 19,440,000 gallons to 12,960,000 gallons. Mr. Planton alleges that the reduction in my estimate of total demand for fire protection is unreasonable, arbitrary, and discriminatory.

I explained the reason for the change in supplemental direct testimony (on pages SD12.15-16). It is simply an application of the concept of smoothing dramatically disparate rate changes. This is a concept Mr. Planton himself advocates, albeit in a different context, on pages R2.14-15 of his rebuttal testimony. Even with my reduced estimate for Milwaukee, the revised cost of service calculates a one percent increase in public fire protection costs for wholesale and suburban retail customers collectively compared to a greater than 25 percent increase for the city of Milwaukee. This does not even include the change Mr. Planton proposes on page SR2.89, to which I do not object but which will convert my small increase in public fire protection costs for wholesale and suburban retail customers into a cost decrease. This is a classic situation for smoothing increases between classes. It is neither unreasonable nor arbitrary.

His argument that my reduced estimate of Milwaukee's total demand for public fire protection is discriminatory is similarly incorrect. He alleges that I have reduced the total demand for Milwaukee while holding constant demands for other customers. This is only true in a narrow comparison to the original cost of service study in Exhibit 12.2 in this case. A more pertinent comparison is to the cost of service study performed for MWW's rate case in 2007. In the 2007 cost of service study, the maximum total water demand for fire protection for the wholesale and suburban retail customers was estimated at 10,710,000 gallons. In this case I reduced this estimate to 8,900,101 gallons. The 2007 cost of service study estimated Milwaukee's total demand for fire protection at 10,800,000 gallons, and I increased this estimate to 12,960,000 gallons. It is not only inaccurate but also surprising that Mr. Planton would call these estimates discriminatory against

wholesale and suburban retail customers when in fact they shift a significant cost burden from these customers to the city of Milwaukee.

Q: On pages R13.19-20, Mr. Gorman argues that in the absence of measured customer demand information you should not have adjusted the customer class demand factors. Why did you adjust these factors?

A: I disagree with Mr. Gorman's conclusion that demand factors cannot be adjusted unless they can be determined exactly. More often than not, obtaining more than limited customer demand measurements for a water utility has been impractical, and the regulator has had to estimate values based on the best information available. In this case the best information available is a comparison with customer demand factors used for other wholesale water utilities.

Mr. Gorman asserts (in lines 21-22 of page R13.20) that keeping demand factors locked at the values used in the 2007 rate case "will allow for a more stable transition from current rate structures to future rate structures." He leaves unexplained why he expects demand factors that are virtually unchanged since the 1990 MWW rate case will allow for a smooth transition once demand results are available for 2010 and beyond. If the demand data MWW proposes to collect justify the demand factors used in the 2007 cost of service study, it would be more than a coincidence, it would be a surprising aberration. My solution of making best estimates for customer demand ratios based on information currently available and refining those estimates based on subsequent observation is more likely to achieve a smooth transition to future rate structures than Mr. Gorman's proposal, which is more likely to force an abrupt transition to future rates.

Mr. Gorman also argues that a comparison with other large wholesale utilities is not a legitimate basis for developing customer class demand ratios. In particular, he argues that MWW cannot be compared to other large wholesale utilities because MWW may have more large industrial or wholesale customers. This is possibly the case, but this dissimilarity would only affect industrial and wholesale demand factors. A difference between MWW's wholesale or industrial customers and those of other utilities does not in any way cast doubt on my comparison of residential, commercial, or public authority demand factors. Since residential, commercial, and public authority classes received the largest adjustments in this case, Mr. Gorman's argument does not apply.

Q: Does this conclude your surrebuttal testimony?

A: Yes.